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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/521,917	01/20/2005	Thomas Bechtold	05579-00338-US	6177

23416 7590 08/31/2007  
CONNOLLY BOVE LODGE & HUTZ, LLP  
P O BOX 2207  
WILMINGTON, DE 19899

EXAMINER
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KHAN, AMINA S

ART UNIT	PAPER NUMBER
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1751

MAIL DATE	DELIVERY MODE
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08/31/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary**

Application No.

10/521,917

Applicant(s)

BECHTOLD ET AL.

Examiner

Amina Khan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 6/15/2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### DETAILED ACTION

1. This office action is in response to applicant's amendments filed on June 15, 2007.
2. Claims 1-17 are pending. Claims 8 and 15 have been amended.
3. The 35 U.S.C. 112, first paragraph, rejection of claims 8 and 14 is withdrawn in view of applicant's amendments.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-6,8-12,16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bechtold et al. (WO 99/11716). Since the WO 99/11716 reference is not in English, the English equivalent, US 6,312,583, is being relied upon for citation purposes.

Bechtold et al. teach dyeing apparatus of figure 1, where the apparatus includes an electrolytic cell with a cation exchange membrane which separates the anolyte and catholyte and a catholyte reservoir in which the dyeing takes place (column 2, lines 30-

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50). Bechtold et al. further teach reducing dyes such as Sulfur Black 1 in alkaline solutions comprising NaOH as the anolyte and at temperatures of 40-50°C (column 2, lines 50-65; column 3, lines 1-10). Bechtold et al. further teach that these dyes have high affinity to fiber materials, especially cellulose (column 1, lines 10-20). Bechtold et al. further teach dye concentrations of 100 g/L (claim 1) , 40-50% dispersion of sulfur black 1 at 200 ml/L (~ 80-100 g/L) and 40-50% dispersion of sulfur black 1 at 20 ml/L (~ 8-10 g/L).

Bechtold et al. do not teach dyeing fiber materials with these methods.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the methods of Bechtold et al. by dyeing fibers in the catholyte reservoir because Bechtold et al. clearly teach that the reservoir is where the dyeing procedure can take place and that the dyes can be used for the purpose of dyeing as they also have high affinity for fibers particularly cellulose (column 1, lines 15-20). One would further expect that the dye solution delivered to the reservoir would maintain the dye concentration and temperature properties it had in the electrolytic cell. One of ordinary skill in the art would expect the methods of Bechtold to encompass the instantly claimed limitations absent unexpected results.

6. Claims 6-8 and 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bechtold et al. (WO 99/11716) as applied to the claims above, and further in view of Carlough (US 5,873,912). Since the WO 99/11716 reference is not in English, the English equivalent, US 6,312,583, is being relied upon for citation purposes.

Bechtold et al. are relied upon as set forth above.

Bechtold et al. do not teach dyeing in inert environments and at temperatures of 60-95°C.

Carlough teaches dyeing cellulosic fibers blended with polyester or polyamides (column 2, lines 1-10) by applying Sulphur Black 1 (column 3, line 19) at temperatures of 35-130°C (column 4, lines 60-65) with dye concentrations of 0.5-10 g/L (column 5, lines 45-50) under inert atmosphere conditions (column 6, lines 15-30).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the methods of Bechtold et al. by dyeing cellulosic blends at the temperatures and inert conditions as taught by Carlough because Carlough teaches these conditions provide improved sulphur dyeings of cellulosic mixed fiber materials (column 1, lines 45-61). One of ordinary skill in the art would have been motivated to combine the teachings of the references absent unexpected results.

### ***Response to Arguments***

7. Applicant's arguments filed regarding Bechtold et al. have been fully considered but they are not persuasive.

The applicant argues:

“ Bechtold provides a process for reducing sulfur dye which results in a product which can be used for dyeing without any (additional) reduction during dyeing. Bechtold reduces first and dyeing is performed subsequently. Such dyeing can be performed in the catholyte reservoir of the reduction step; however, the reduction equipment is not operative during dyeing.

A person of ordinary skill in the art would have known that the process for reducing sulfur dye comprising production of a certain amount of reduction equivalents (as described by Bechtold) is not comparable with a process which requires maintaining stable conditions for

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dyeing. In other words, the Bechtold process cannot be simply modified to arrive at the claimed dyeing process because Bechtold utilizes a completely different approach to dyeing and in fact would be ineffective in a dyeing process."

The examiner respectfully disagrees. Bechtold et al. clearly teach that the container 10 forms a catholyte reservoir where a catholyte is circulated for dyeing of goods and wherein the catholyte is reduced in the circulation flow of the circuit 9. Circuit 9 comprises both fluids entering and leaving the catholyte reservoir. Furthermore a potential sensor 7 is also present in the dyeing container (column 2, lines 35-50; Figure 1). These teachings meet the limitations of the instantly claims and therefore the rejections are maintained.

8. Applicant's arguments filed regarding Bechtold et al. in view of Carlough have been fully considered but they are not persuasive.

The applicant argues:

" Carlough teaches an exhaust dyeing process with a sulfur dye which does not involve any electrochemical means. All reduction is done chemically by non-sulphide reducing agents (see column 1, lines 59-60). In order to avoid oxidation of reduced sulfur dye, the process is performed in a closed vessel in an atmosphere of reduced oxygen level (see column 1, lines 60-61)."

The examiner asserts that while Carlough does not teach electrochemical means of reducing the dyes, Carlough teaches efficiently dyeing cellulosic materials with Sulfur Black 1 under inert conditions. Because both Carlough and Bechtold teach methods of dyeing cellulose with Black Sulfur 1 at overlapping dye concentrations and overlapping temperature ranges, it would have been obvious to one skilled in the art to substitute one method utilizing inert conditions for one not using inert conditions to achieve the predictable result of efficiently dyeing the cellulose.

***Conclusion***

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amina Khan whose telephone number is (571) 272-5573. The examiner can normally be reached on Monday through Friday, 8:30-5.

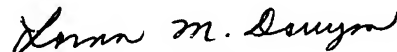
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas McGinty can be reached on (571) 272-1029. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



AK  
August 28, 2007

  
LORNA M. DOUYON  
PRIMARY EXAMINER